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CAMPBELL STEPHENSON ASCOLESE, LLP
4807 SPICEWOOD SPRINGS RD.
BLDG. 4, SUITE 201
AUSTIN, TX 78759

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 10/074,264 | DAMLE ET AL. |
| | Examiner | Art Unit |
| | Ashok B. Patel | 2154 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *22 January 2007*.

2a)☒ This action is **FINAL**.        2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-37* is/are pending in the application.

    4a) Of the above claim(s) *12 and 23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11, 13-22 and 24-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)                    Office Action Summary                    Part of Paper No./Mail Date 20070319

## DETAILED ACTION

1.      Claims 1-37 are subject to examination. Claims 12 and 23 are cancelled.

### *Response to Arguments*

2.      Applicant's arguments with respect to claims 1 , 13 24 and 30 have been

considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 102*

3.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or
> in public use or on sale in this country, more than one year prior to the date of application for
> patent in the United States.

4.      Claims 1-11, 13-22 and 24-37 are rejected under 35 U.S.C. 102(b) as being

anticipated by York (US 5, 680, 400).

**Referring to claim 1,**

York teaches a  method for transporting information over a network (Figs. 1-3)

comprising:

decomposing an input datastream into a plurality of sub-streams, wherein said

decomposing comprises placing a portion of the input datastream (col. 1, line 50-57, "

Data is presented to a data splitter.  The data splitter separates the input data stream

into N separate substreams by packaging data into packets, which may be of different

sizes.  As data is packetized, each packet is sent and presented to a separate data

transmitter, one for each data substream, via an input queue to each transmitter.  Each

transmitter queue has a significant amount of packet storage available to hold input packets.")into one of a plurality of queues (Fig. 1, element TQ1, TQ2,............ TQN, col. 3, line 3-5, "Transmitters 112 and receivers 114 are connected to queues 110 and 116, each having the ability store multiple packets of data.") and

forming the portion of the input datastream using one or more payload data units (PDUs) each comprising a predetermined amount of data (col. 3, line 30-38, "In step 204, the data splitter 108 splits the single continuous data stream into N separate substreams by packaging the data into packets, which may be variable sizes. The packet size is dependent on the characteristics of the transmitters and receivers and is determined at the time the network connections are established. FIG. 3 shows part of a continuous data stream and an example packet. In this description and throughout the figures, N represents any number greater than 1."),

forming each PDU by selecting the predetermined amount of data from the input datastream (col. 3, line 30-38, " In step 204, the data splitter 108 splits the single continuous data stream into N separate substreams by packaging the data into packets, which may be variable sizes. The packet size is dependent on the characteristics of the transmitters and receivers and is determined at the time the network connections are established. FIG. 3 shows part of a continuous data stream and an example packet. In this description and throughout the figures, N represents any number greater than 1."), and

each queue of the plurality of queues corresponds to a corresponding channel of a plurality of channels (col. 3, line 39-48, "In step 204, the data splitter 108 splits the single continuous data stream into N separate substreams by packaging the data into packets, which may be variable sizes. The packet size is dependent on the characteristics of the transmitters and receivers and is determined at the time the network connections are established. FIG. 3 shows part of a continuous data stream and an example packet. In this description and throughout the figures, N represents any number greater than 1."); and

communicating said sub-streams between a first network element and a second network element of said network by transporting each one of said sub-streams over the corresponding channel (col. 5, line 4-17, "During network connection setup, the dam splitter interrogates each logical path to determine the allowable maximum data packet size permitted by the underlying physical transport system. By design convention, the data splitter selects one of the logical connections as the first connection to the other host computer. This connection is established first and involves the sending of greetings and setup parameters between the data splitter and the data packet reassembly unit. Setup parameters include the number and exact identity of logical channels which will be used and the ordering of logical channels as will be used during the data transmission phase of data transfer. This is important as the data reassembly unit must have the identical number of logical channels as the transmission side and it must use them in the identical order to the transmit side. "), wherein

a transmission rate of said input datastream (col. 3, line 24-26, "To transfer a file, the host processor 104 sends a continuous data stream of data, at rates around 1-to-10 mega bytes per second.")is greater than a maximum transmission rate of any one of said channels (col. 4, line 19-23, "Transmitter data transfer rates typically range between 1.54 mega bits per second to 10 mega bits per second. Higher throughput can be achieved by increasing the number of transmitters 112 and receivers 114.")

**Referring to claim 2,**

York teaches the method of claim 1, wherein each of said channels is an optical channel (col. 3, line 61-67, "It is also assumed that standard transmission links 113 are employed such as data telephone lines, fiber optic cables, etc. Additionally, it is possible to have one link 113 or multiple links corresponding to the quantity of transmitters and receivers. If a single link is employed, then it is necessary to mark each substream packet with a unique identity and multiplex the transmitters.").

**Referring to claim 3,**

York teaches the method of claim 2, wherein each of said optical channels corresponds to a wavelength (col. 3, line 61-67, "It is also assumed that standard transmission links 113 are employed such as data telephone lines, fiber optic cables, etc. Additionally, it is possible to have one link 113 or multiple links corresponding to the quantity of transmitters and receivers. If a single link is employed, then it is necessary to mark each substream packet with a unique identity and multiplex the transmitters.")

**Referring to claim 4,**

York teaches the method of claim 1, wherein said each one of said sub-streams has a transmission rate that is equal to or less than a maximum transmission rate of a corresponding one of said channels. (col. 3, line 24-26, "To transfer a file, the host processor 104 sends a continuous data stream of data, at rates around 1-to-10 mega bytes per second.", col. 4, line 19-23, "Transmitter data transfer rates typically range between 1.54 mega bits per second to 10 mega bits per second. Higher throughput can be achieved by increasing the number of transmitters 112 and receivers 114.")

**Referring to claim 5,**

York teaches the method of claim 1, further comprising: assembling said sub-streams into a reconstructed output datastream (col. 4, line 23-41, "Next, in steps 212, 214 receivers 114 receive packets from transmitter 112 via link 113. The transmission links are assumed to guarantee data packet ordering as presented by the input data packet queues. The receiving side initializes as many receivers as needed, or as many data receive substreams as are required, using as many receivers as are available. Each receiver guarantees that correct ordering of received packets in their respective queues 116. Receivers 114 also guarantee that data is integrity checked and are able to handle retransmitted packets as needed. Next, in step 216, the substream reassembly unit 118, polls each receiver queue 116 for data packets. Receiver queues 116 are polled in the same prearranged order as the round robin method described earlier. Then, the substream reassembly unit 118 reassembles the packets into a final output stream and is sent to FIFO 120 (typically the same size as FIFO 106) via bus 119. Then in step 218, the host processor 122 reads the continuous data stream.")

**Referring to claim 6,**

York teaches the method of claim 5, wherein said assembling comprises: placing a portion of each of said substreams in a queue (Fig. 2, element 208), wherein said reconstructed output datastream is output by said queue (Fig. 2, element 214).

**Referring to claim 7,**

York teaches the method of claim 5, further comprising: performing protocol processing on said input datastream (col. 3, line 55-57, "It is assumed that each transmitter are capable of sending packets of data to a receiver with data integrity checks and employ data compression if so configured."); and performing protocol processing on said reconstructed output datastream (Fig. 2, 210 and 212), wherein said protocol processing is performed using a protocol processor comprising a protocol stack (Fig. 1, elements 104 and 122).

**Referring to claim 8,**

York teaches the method of claim 1, further comprising: performing compression on a one of said sub-streams, wherein said one of said sub-streams has a transmission rate greater than a maximum transmission rate of the corresponding channel.(col. 3, line 55-57, "It is assumed that each transmitter are capable of sending packets of data to a receiver with data integrity checks and employ data compression if so configured.")

**Referring to claim 9,**

York teaches the method of claim 1, wherein said network is an existing network (Figs. 1 and 3).

**Referring to claim 10,**

York teaches the method of claim 1method of claim 1, wherein said network comprises an underlying network infrastructure (Fig. 1, element 113), and the method is performed without alteration of said underlying network infrastructure It is also assumed that standard transmission links 113 are employed such as data telephone lines, fiber optic cables, etc.", Col. 2, line 56-62, "The high performance communication system 100 takes a single input data stream 105, 107 from the host processor 104 and splits the single input data stream 105, 107 into multiple parallel streams 109 which are then presented to one or more independent physical data transmitters 112 and one or more independent physical data receivers 114.")

**Referring to claim 11,**

York teaches the method of claim 10, wherein said network comprises a fiber-optic system. (col. 3, line 61-67, "It is also assumed that standard transmission links 113 are employed such as data telephone lines, <u>fiber optic cables</u>, etc. Additionally, it is possible to have one link 113 or multiple links corresponding to the quantity of transmitters and receivers. If a single link is employed, then it is necessary to mark each substream packet with a unique identity and multiplex the transmitters.").

**Referring to claim 13,**

York teaches a method for receiving information transported over a network (Fig. 1, element 118, Fig. 2, element 212) comprising:

receiving a plurality of sub-streams (Fig. 1, elements 116A......116N, 118, Fig. 2, element 212), wherein said sub-streams are created by decomposing an input datastream into a plurality of sub-streams, wherein said decomposing comprises placing a portion of the input datastream (col. 1, line 50-57, " Data is presented to a data splitter. The data splitter separates the input data stream into N separate substreams by packaging data into packets, which may be of different sizes. As data is packetized, each packet is sent and presented to a separate data transmitter, one for each data substream, via an input queue to each transmitter. Each transmitter queue has a significant amount of packet storage available to hold input packets.") into one of a plurality of queues (Fig. 1, element TQ1, TQ2,.......... TQN, col. 3, line 3-5, "Transmitters 112 and receivers 114 are connected to queues 110 and 116, each having the ability store multiple packets of data.") and

forming the portion of the input datastream using one or more payload data units (PDUs) each comprising a predetermined amount of data (col. 3, line 30-38, "In step 204, the data splitter 108 splits the single continuous data stream into N separate substreams by packaging the data into packets, which may be variable sizes. The packet size is dependent on the characteristics of the transmitters and receivers and is determined at the time the network connections are established. FIG. 3 shows part of a continuous data stream and an example packet. In this description and throughout the figures, N represents any number greater than 1."),

forming each PDU by selecting the predetermined amount of data from the input

datastream (col. 3, line 30-38, " In step 204, the data splitter 108 splits the single

continuous data stream into N separate substreams by packaging the data into packets,

which may be variable sizes.  The packet size is dependent on the characteristics of the

transmitters and receivers and is determined at the time the network connections are

established. FIG. 3 shows part of a continuous data stream and an example packet.  In

this description and throughout the figures, N represents any number greater than 1."),

and

each queue of the plurality of queues corresponds to a corresponding channel of

a plurality of channels (col. 3, line 39-48, "In step 204, the data splitter 108 splits the

single continuous data stream into N separate substreams by packaging the data into

packets, which may be variable sizes.   The packet size is dependent on the

characteristics of the transmitters and receivers and is determined at the time the

network connections are established.  FIG. 3 shows part of a continuous data stream

and an example packet.  In this description and throughout the figures, N represents

any number greater than 1."); and

each of said sub-streams is transported  over said network on the corresponding

channel (col. 5, line 4-17, "During network connection setup, the dam splitter

interrogates each logical path to determine the allowable maximum data packet size

permitted by the underlying physical transport system.  By design convention, the data

splitter selects one of the logical connections as the first connection to the other host

computer.  This connection is established first and involves the sending of greetings and

setup parameters between the data splitter and the data packet reassembly unit. Setup parameters include the number and exact identity of logical channels which will be used and the ordering of logical channels as will be used during the data transmission phase of data transfer. This is important as the data reassembly unit must have the identical number of logical channels as the transmission side and it must use them in the identical order to the transmit side. "), and

a transmission rate of said input datastream (col. 3, line 24-26, "To transfer a file, the host processor 104 sends a continuous data stream of data, at rates around 1-to-10 mega bytes per second.")is greater than a maximum transmission rate of any one of said channels (col. 4, line 19-23, "Transmitter data transfer rates typically range between 1.54 mega bits per second to 10 mega bits per second. Higher throughput can be achieved by increasing the number of transmitters 112 and receivers 114.")

assembling said sub-streams into a reconstructed output datastream (col. 4, line 34-41, "Next, in step 216, the substream reassembly unit 118, polls each receiver queue 116 for data packets. Receiver queues 116 are polled in the same prearranged order as the round robin method described earlier. Then, the substream reassembly unit 118 reassembles the packets into a final output stream and is sent to FIFO 120 (typically the same size as FIFO 106) via bus 119. Then in step 218, the host processor 122 reads the continuous data stream.")

**Referring to claim 14,**

York teaches the method of claim 13, wherein each of said channels is an optical channel (col. 3, line 61-67, "It is also assumed that standard transmission links 113 are employed such as data telephone lines, <u>fiber optic cables</u>, etc. Additionally, it is possible to have one link 113 or multiple links corresponding to the quantity of transmitters and receivers. If a single link is employed, then it is necessary to mark each substream packet with a unique identity and multiplex the transmitters.").

**Referring to claim 15,**

York teaches the method of claim 14, wherein each of said optical channels corresponds to a wavelength (col. 3, line 61-67, "It is also assumed that standard transmission links 113 are employed such as data telephone lines, <u>fiber optic cables</u>, etc. Additionally, it is possible to have one link 113 or multiple links corresponding to the quantity of transmitters and receivers. If a single link is employed, then it is necessary to mark each substream packet with a unique identity and multiplex the transmitters.")

**Referring to claim 16,**

York teaches the method of claim 13, wherein said each one of said sub-streams has a transmission rate that is equal to or less than a maximum transmission rate of a corresponding one of said channels. (col. 3, line 24-26, "To transfer a file, the host processor 104 sends a continuous data stream of data, at rates around 1-to-10 mega bytes per second.", col. 4, line 19-23, "Transmitter data transfer rates typically range between 1.54 mega bits per second to 10 mega bits per second. Higher throughput can be achieved by increasing the number of transmitters 112 and receivers 114.")

**Referring to claim 17,**

York teaches the method of claim 5, wherein said assembling comprises: placing a portion of each of said substreams in a queue (Fig. 2, element 208), wherein said reconstructed output datastream is output by said queue (Fig. 2, element 214).

**Referring to claim 18,**

York teaches the method of claim 13, further comprising: decomposing said input datastream into said sub-streams; and transporting said each of said sub-streams over said network on the corresponding channel. (col. 5, line 4-17, "During network connection setup, the dam splitter interrogates each logical path to determine the allowable maximum data packet size permitted by the underlying physical transport system. By design convention, the data splitter selects one of the logical connections as the first connection to the other host computer. This connection is established first and involves the sending of greetings and setup parameters between the data splitter and the data packet reassembly unit. Setup parameters include the number and exact identity of logical channels which will be used and the ordering of logical channels as will be used during the data transmission phase of data transfer. This is important as the data reassembly unit must have the identical number of logical channels as the transmission side and it must use them in the identical order to the transmit side. ")

**Referring to claim 19,**

York teaches the method of claim 13, further comprising: performing protocol processing on said input datastream (col. 3, line 55-57, "It is assumed that each

transmitter are capable of sending packets of data to a receiver with data integrity checks and employ data compression if so configured."); and performing protocol processing on said reconstructed output datastream (Fig. 2, 210 and 212), wherein said protocol processing is performed using a protocol processor comprising a protocol stack (Fig. 1, elements 104 and 122).

**Referring to claim 20,**

York teaches the method of claim 13, wherein said network is an existing network (Figs. 1 and 3).

**Referring to claim 21,**

York teaches the method of claim 13, wherein said network comprises an underlying network infrastructure (Fig. 1, element 113), and the method is performed without alteration of said underlying network infrastructure It is also assumed that standard transmission links 113 are employed such as data telephone lines, fiber optic cables, etc.", Col. 2, line 56-62, "The high performance communication system 100 takes a single input data stream 105, 107 from the host processor 104 and splits the single input data stream 105, 107 into multiple parallel streams 109 which are then presented to one or more independent physical data transmitters 112 and one or more independent physical data receivers 114.")

**Referring to claim 22,**

York teaches the method of claim 21, wherein said network comprises a fiber-optic system. (col. 3, line 61-67, "It is also assumed that standard transmission links 113 are employed such as data telephone lines, fiber optic cables, etc. Additionally, it is possible to have one link 113 or multiple links corresponding to the quantity of transmitters and receivers. If a single link is employed, then it is necessary to mark each substream packet with a unique identity and multiplex the transmitters.").

**Referring to claim 24,**

York teaches an apparatus for transporting information over a network comprising:

a first sub-stream management device (Fig. 1, elements 102, 103, 106, 108 and 110A....110N), comprising an input configured to receive an input datastream (Fig. 1, element 104), and a plurality of outputs (Fig. 1, element 108, 11- A.......110N), wherein each of said outputs is c6nfigur~d to output one of a plurality of sub-streams (Fig.1, elements 110A.......100n, 112A...........112N), wherein the input datastream is decomposed to form the plurality of sub-streams, wherein said decomposing comprises placing a portion of the input datastream (col. 1, line 50-57, " Data is presented to a data splitter. The data splitter separates the input data stream into N separate substreams by packaging data into packets, which may be of different sizes. As data is packetized, each packet is sent and presented to a separate data transmitter, one for each data substream, via an input queue to each transmitter. Each transmitter queue has a significant amount of packet storage available to hold input packets.")into one of a

plurality of queues (Fig. 1, element TQ1, TQ2,.......... TQN, col. 3, line 3-5, "Transmitters 112 and receivers 114 are connected to queues 110 and 116, each having the ability store multiple packets of data.") and

forming the portion of the input datastream using one or more payload data units (PDUs) each comprising a predetermined amount of data (col. 3, line 30-38, "In step 204, the data splitter 108 splits the single continuous data stream into N separate substreams by packaging the data into packets, which may be variable sizes. The packet size is dependent on the characteristics of the transmitters and receivers and is determined at the time the network connections are established. FIG. 3 shows part of a continuous data stream and an example packet. In this description and throughout the figures, N represents any number greater than 1."),

forming each PDU by selecting the predetermined amount of data from the input datastream (col. 3, line 30-38, " In step 204, the data splitter 108 splits the single continuous data stream into N separate substreams by packaging the data into packets, which may be variable sizes. The packet size is dependent on the characteristics of the transmitters and receivers and is determined at the time the network connections are established. FIG. 3 shows part of a continuous data stream and an example packet. In this description and throughout the figures, N represents any number greater than 1."), and

each queue of the plurality of queues corresponds to a corresponding channel of a plurality of channels (col. 3, line 39-48, "In step 204, the data splitter 108 splits the

single continuous data stream into N separate substreams by packaging the data into

packets, which may be variable sizes.    The packet size is dependent on the

characteristics of the transmitters and receivers and is determined at the time the

network connections are established.   FIG. 3 shows part of a continuous data stream

and an example packet.   In this description and throughout the figures, N represents

any number greater than 1."); and

each of said sub-streams is transported  over said network on the corresponding

channel (col. 5, line 4-17, "During network connection setup, the dam splitter

interrogates each logical path to determine the allowable maximum data packet size

permitted by the underlying physical transport system.  By design convention, the data

splitter selects one of the logical connections as the first connection to the other host

computer.  This connection is established first and involves the sending of greetings and

setup parameters between the data splitter and the data packet reassembly unit.  Setup

parameters include the number and exact identity of logical channels which will be used

and the ordering of logical channels as will be used during the data transmission phase

of data transfer.  This is important as the data reassembly unit must have the identical

number of logical channels as the transmission side and it must use them in the

identical order to the transmit side. "), and

a transmission rate of said input datastream (col. 3, line 24-26, "To transfer a file,

the host processor 104 sends a continuous data stream of data, at rates around 1-to-10

mega bytes per second.")is greater than a maximum transmission rate of any one

of said channels (col. 4, line 19-23, "Transmitter data transfer rates typically range

between 1.54 mega bits per second to 10 mega bits per second. Higher throughput can

be achieved by increasing the number of transmitters 112 and receivers 114.")

**Referring to claim 25,**

Claim 25 is a claim to an apparatus for carrying t out the method of claim 14.

Therefore claim 25 is rejected for the reasons set forth for claim 14.

**Referring to claim 26,**

Claim 26 is a claim to an apparatus for carrying t out the method of claim 15.

Therefore claim 26 is rejected for the reasons set forth for claim 15.

**Referring to claim 27,**

Claim 27 is a claim to an apparatus for carrying t out the method of claim 16.

Therefore claim 27 is rejected for the reasons set forth for claim 16.

**Referring to claim 28,**

York teaches the apparatus of claim 24, further comprising a second sub-stream

management device (Fig. 1, elements, 114A.....114N, 116A....116N, element 118,

element 120), comprising an output configured to output a reconstructed output

datastream (Fig. 1, element 118), and a plurality of inputs(Fig. 1, elements,

114A.....114N, 116A....116), wherein each of said inputs is configured to receive one

of said sub- streams (Fig. 1, elements, 114A.....114N, 116A....116N); and an

underlying network infrastructure, communicatively coupled to said first and said second

sub-stream management devices, and comprising said channels (col. 5, line 4-17,

"During network connection setup, the dam splitter interrogates each logical path to

determine the allowable maximum data packet size permitted by the underlying physical

transport system. By design convention, the data splitter selects one of the logical

connections as the first connection to the other host computer. This connection is

established first and involves the sending of greetings and setup parameters between

the data splitter and the data packet reassembly unit. Setup parameters include the

number and exact identity of logical channels which will be used and the ordering of

logical channels as will be used during the data transmission phase of data transfer.

This is important as the data reassembly unit must have the identical number of logical

channels as the transmission side and it must use them in the identical order to the

transmit side. ").

**Referring to claim 29,**

York teaches the apparatus of claim 28, further comprising

a first protocol processor, coupled to said input (col. 3, line 55-57, "It is assumed

that each transmitter are capable of sending packets of data to a receiver with data

integrity checks and employ data compression if so configured." (Fig. 2, 210 and 212); a

second protocol processor, coupled to said output; and wherein, the first and second

protocol processors each comprise a protocol stack. (Fig. 1, elements 104 and 122 both

including 108 and 118).

**Referring to claim 30,**

York       teaches      an apparatus for transporting information over a       network

comprising:

a first sub-stream management device(Fig. 1, elements 114A...114N, 116A.....116N, 118, 120 and 121), comprising an output configured to output a reconstructed output datastream(Fig. 1, elements 114A...114N, 116A.....116N, 118, 120 and 121), and a plurality of inputs(Fig. 1, elements 114A...114N, 116A.....116N, 118, 120 and 121), wherein each of said inputs is configured to receive one of a plurality of sub-streams (Fig. 1, elements 114A...114N, 116A.....116N, 118, 120 and 121),wherein

said decomposing comprises placing a portion of the input datastream (col. 1, line 50-57, " Data is presented to a data splitter. The data splitter separates the input data stream into N separate substreams by packaging data into packets, which may be of different sizes. As data is packetized, each packet is sent and presented to a separate data transmitter, one for each data substream, via an input queue to each transmitter. Each transmitter queue has a significant amount of packet storage available to hold input packets.")into one of a plurality of queues (Fig. 1, element TQ1, TQ2,.......... TQN, col. 3, line 3-5, "Transmitters 112 and receivers 114 are connected to queues 110 and 116, each having the ability store multiple packets of data.") and

forming the portion of the input datastream using one or more payload data units (PDUs) each comprising a predetermined amount of data (col. 3, line 30-38, "In step 204, the data splitter 108 splits the single continuous data stream into N separate substreams by packaging the data into packets, which may be variable sizes. The packet size is dependent on the characteristics of the transmitters and receivers and is determined at the time the network connections are established. FIG. 3 shows part of a

continuous data stream and an example packet. In this description and throughout the

figures, N represents any number greater than 1."),

forming each PDU by selecting the predetermined amount of data from the input

datastream (col. 3, line 30-38, " In step 204, the data splitter 108 splits the single

continuous data stream into N separate substreams by packaging the data into packets,

which may be variable sizes. The packet size is dependent on the characteristics of the

transmitters and receivers and is determined at the time the network connections are

established. FIG. 3 shows part of a continuous data stream and an example packet. In

this description and throughout the figures, N represents any number greater than 1."),

and

each queue of the plurality of queues corresponds to a corresponding channel of

a plurality of channels (col. 3, line 39-48, "In step 204, the data splitter 108 splits the

single continuous data stream into N separate substreams by packaging the data into

packets, which may be variable sizes. The packet size is dependent on the

characteristics of the transmitters and receivers and is determined at the time the

network connections are established. FIG. 3 shows part of a continuous data stream

and an example packet. In this description and throughout the figures, N represents

any number greater than 1."); and

each of said sub-streams is transported over said network on the corresponding

channel (col. 5, line 4-17, "During network connection setup, the dam splitter

interrogates each logical path to determine the allowable maximum data packet size

permitted by the underlying physical transport system. By design convention, the data splitter selects one of the logical connections as the first connection to the other host computer. This connection is established first and involves the sending of greetings and setup parameters between the data splitter and the data packet reassembly unit. Setup parameters include the number and exact identity of logical channels which will be used and the ordering of logical channels as will be used during the data transmission phase of data transfer. This is important as the data reassembly unit must have the identical number of logical channels as the transmission side and it must use them in the identical order to the transmit side. "), and

a transmission rate of said input datastream (col. 3, line 24-26, "To transfer a file, the host processor 104 sends a continuous data stream of data, at rates around 1-to-10 mega bytes per second.")is greater than a maximum transmission rate of any one of said channels (col. 4, line 19-23, "Transmitter data transfer rates typically range between 1.54 mega bits per second to 10 mega bits per second. Higher throughput can be achieved by increasing the number of transmitters 112 and receivers 114.")

**Referring to claim 31,**

Claim 31 is a claim to an apparatus for carrying t out the method of claim 14. Therefore claim 31 is rejected for the reasons set forth for claim 14.

**Referring to claim 32,**

Claim 32 is a claim to an apparatus for carrying t out the method of claim 15. Therefore claim 32 is rejected for the reasons set forth for claim 15.

**Referring to claim 33,**

Claim 33 is a claim to an apparatus for carrying t out the method of claim 16.

Therefore claim 33 is rejected for the reasons set forth for claim 16.

**Referring to claim 34,**

York teaches the apparatus of claim 30, further comprising a second sub-stream

management device (Fig. 1, elements, 102, 104, 106, 108, 110A.....110N,

112A.....112N), comprising an input configured to receive said input datastream(Fig. 1,

elements, 102, 104, 106, 108, 110A.....110N, 112A.....112N), and a plurality of

outputs(Fig. 1, elements, 102, 104, 106, 108, 110A.....110N, 112A.....112N), wherein

each of said outputs is configured to output one of said sub-streams (Fig. 1, elements,

102, 104, 106, 108, 110A.....110N, 112A.....112N),; and an underlying network

infrastructure, communicatively coupled to said first and said second sub-stream

management devices, and comprising said channels(col. 5, line 4-17, "During network

connection setup, the dam splitter interrogates each logical path to determine the

allowable maximum data packet size permitted by the underlying physical transport

system.  By design convention, the data splitter selects one of the logical connections

as the first connection to the other host computer.  This connection is established first

and involves the sending of greetings and setup parameters between the data splitter

and the data packet reassembly unit.  Setup parameters include the number and exact

identity of logical channels which will be used and the ordering of logical channels as

will be used during the data transmission phase of data transfer.  This is important as

the data reassembly unit must have the identical number of logical channels as the

transmission side and it must use them in the identical order to the transmit side. ").

**Referring to claim 35,**

York teaches the apparatus of claim 34, further comprising

a first protocol processor, coupled to said input (col. 3, line 55-57, "It is assumed that each transmitter are capable of sending packets of data to a receiver with data integrity checks and employ data compression if so configured." (Fig. 2, 210 and 212); a second protocol processor, coupled to said output; and wherein, the first and second protocol processors each comprise a protocol stack. (Fig. 1, elements 104 and 122 both including 108 and 118).

**Referring to claim 36,**

York teaches the method of claim 1 wherein selecting the selected one of a plurality of channels comprises: using a simple round-robin technique to choose an available one of the plurality of channels (col. 1, line 58-col. 2, line3, "Data is sent to the array of transmitters in round-robin fashion such that the data is first presented to the first transmitter, then to the second transmitter, and so on until each transmitter has been sent a packet, then the first transmitter is sent another, and so on, until all data packets have been sent to a transmitter. Each data transmitter processes packets and transmits them sequentially to one or more data receivers. There may be more than one physical media between the transmitters and receivers, or a single transmission link may be used with all data substreams being multiplexed together. As each substream is marked with its unique identity, all data packets in a given substream have the identity of the substream.")

**Referring to claim 36,**

York teaches the apparatus of Claim 24 wherein selecting the selected one of the plurality of outputs comprises: using a simple round-robin technique to choose an available one of the plurality of outputs (col. 4, line 34-41, "Next, in step 216, the substream reassembly unit 118, polls each receiver queue 116 for data packets. Receiver queues 116 are polled in the same prearranged order as the round robin method described earlier. Then, the substream reassembly unit 118 reassembles the packets into a final output stream and is sent to FIFO 120 (typically the same size as FIFO 106) via bus 119. Then in step 218, the host processor 122 reads the continuous data stream.")

### *Conclusion*

**Examiner's note:** Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

*NATHAN J. FLYNN*
*SUPERVISORY PATENT EXAMINER*
*TECHNOLOGY CENTER 2800*

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ashok B. Patel whose telephone number is (571) 272-

3972. The examiner can normally be reached on 6:30 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Nathan A. Flynn can be reached on (571) 272-1915. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

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